
Ambient Air Monitoring of Great Lakes Toxics through the National Air Pollution Surveillance (NAPS) Network

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Binational Toxics Strategy Stakeholder Forum - Windsor

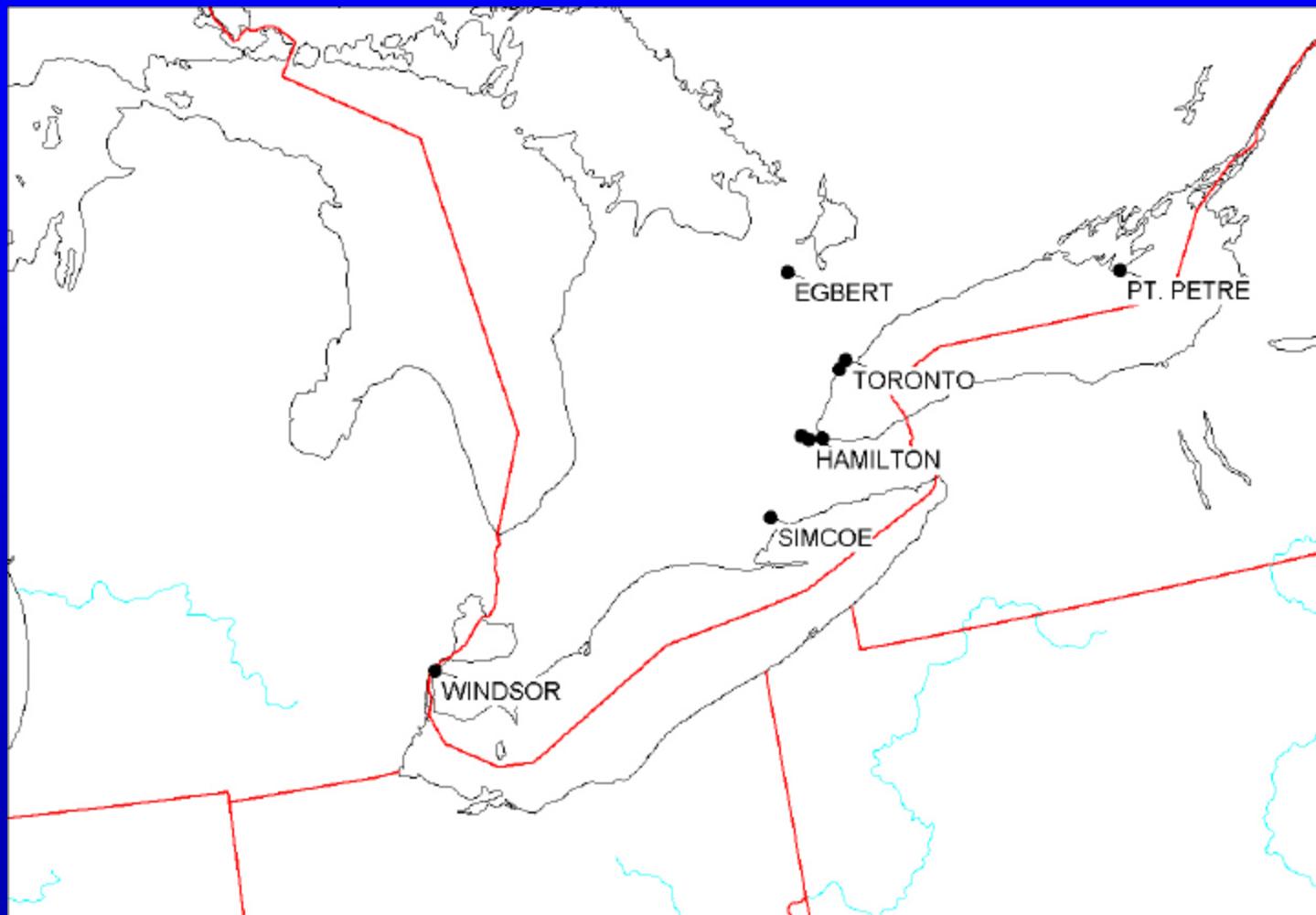
Background

- Measurement program is a component of the National Air Pollution Surveillance (NAPS) Network (Federal/Provincial/Municipal)
- Funding for enhanced program in Ontario provided by Environmental Protection, Ontario Region
- Urban focus but rural sites included
- Air concentration measurements (no precipitation data)

Species Measured

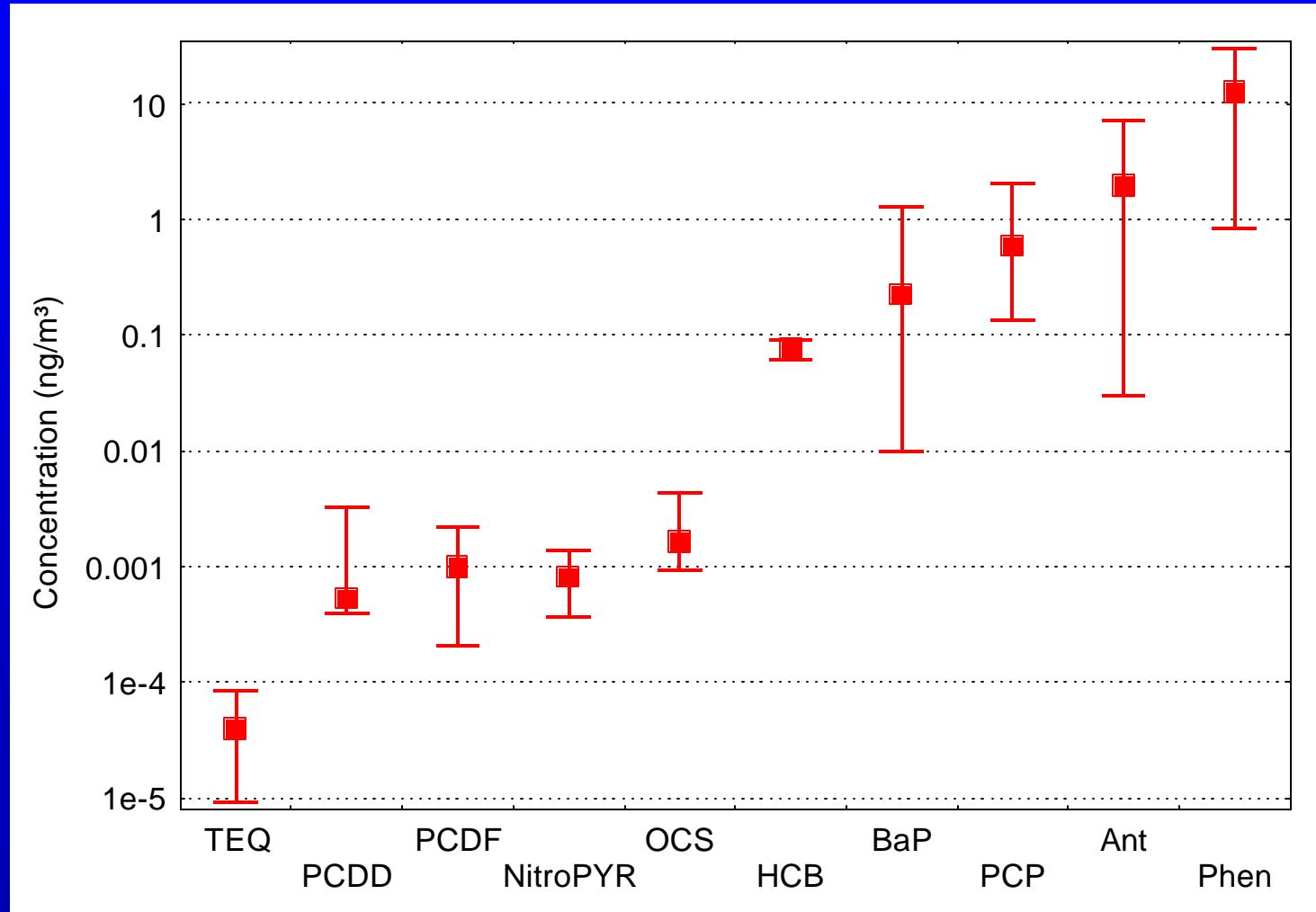
- PAH - 28 species including benzo(a)pyrene, anthracene
- PCDD/PCDF - 2,3,7,8 substituted isomers and congener totals
- Hexachlorobenzene (HCB)
- Pentachlorophenol (PCP)
- Octachlorostyrene (OCS)
- Nitro-PAH - C₁₃ to C₂₂, 24 species including dinitropyrenes
- Metals - Hg, Cd, Pb (particulate phase only)
- VOC - 1,4-dichlorobenzene

Monitoring Site Locations

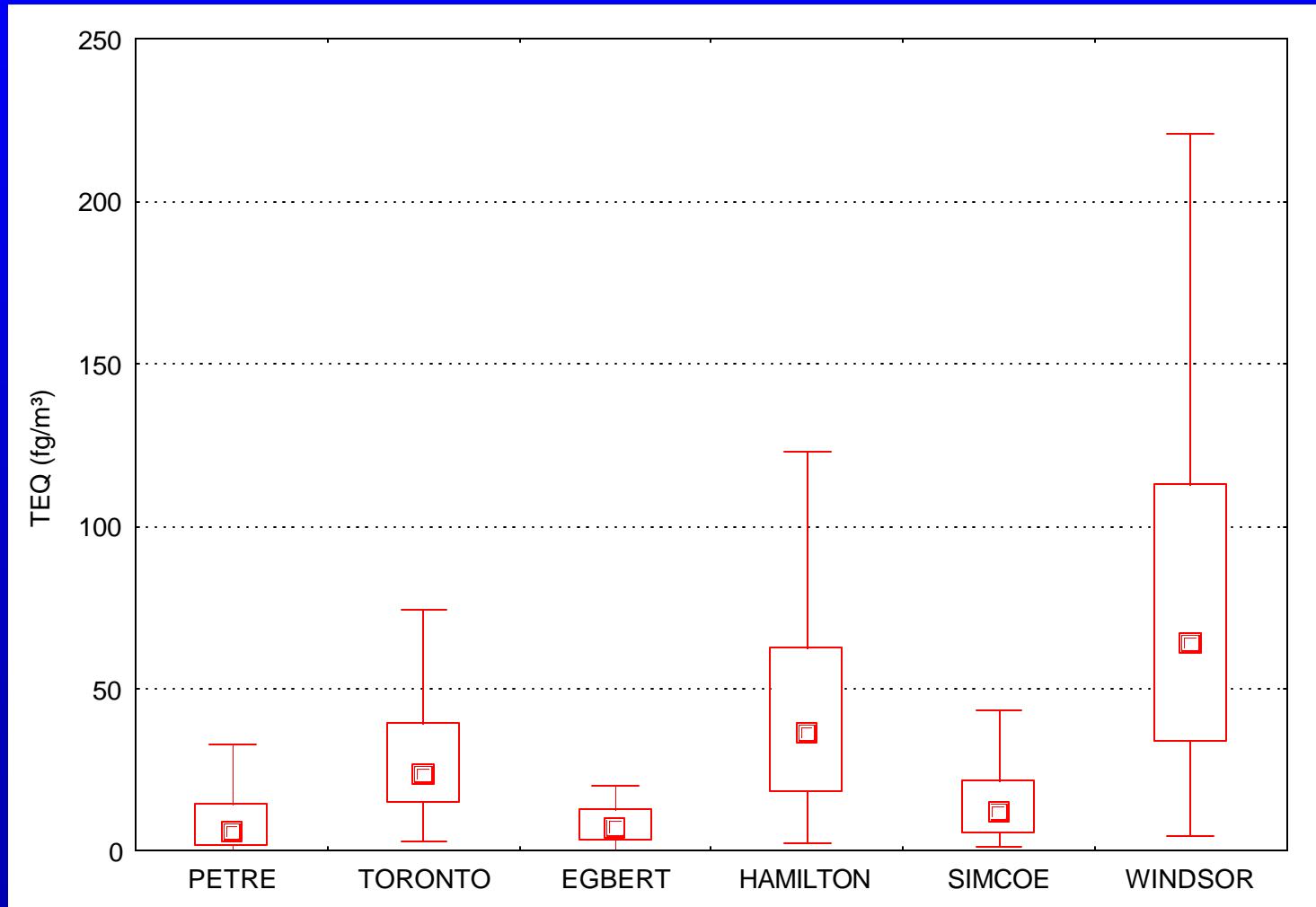


Site Concentration Ranges (ng/m³)

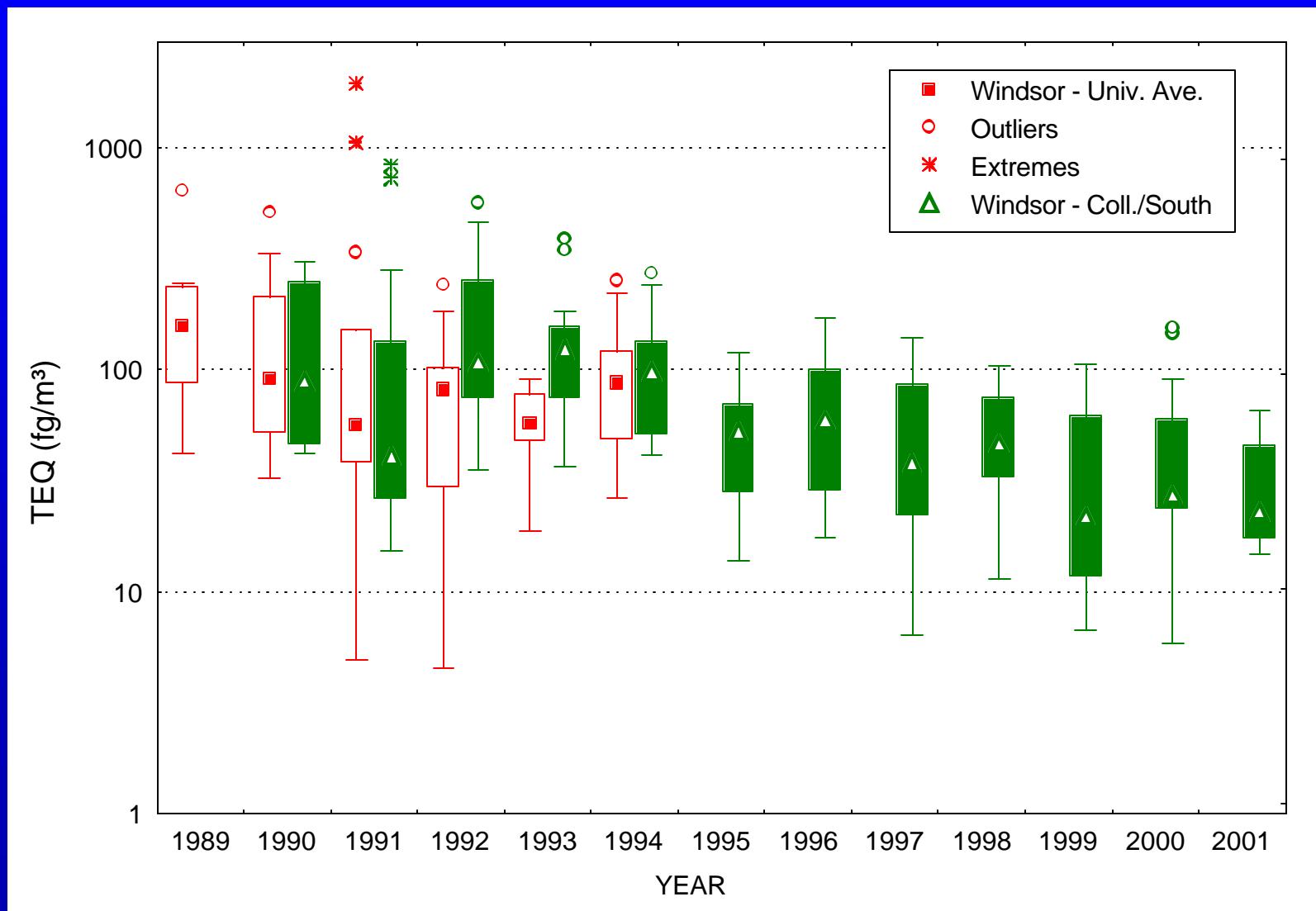
1996 - 2001 (Min., Mean, Max.)



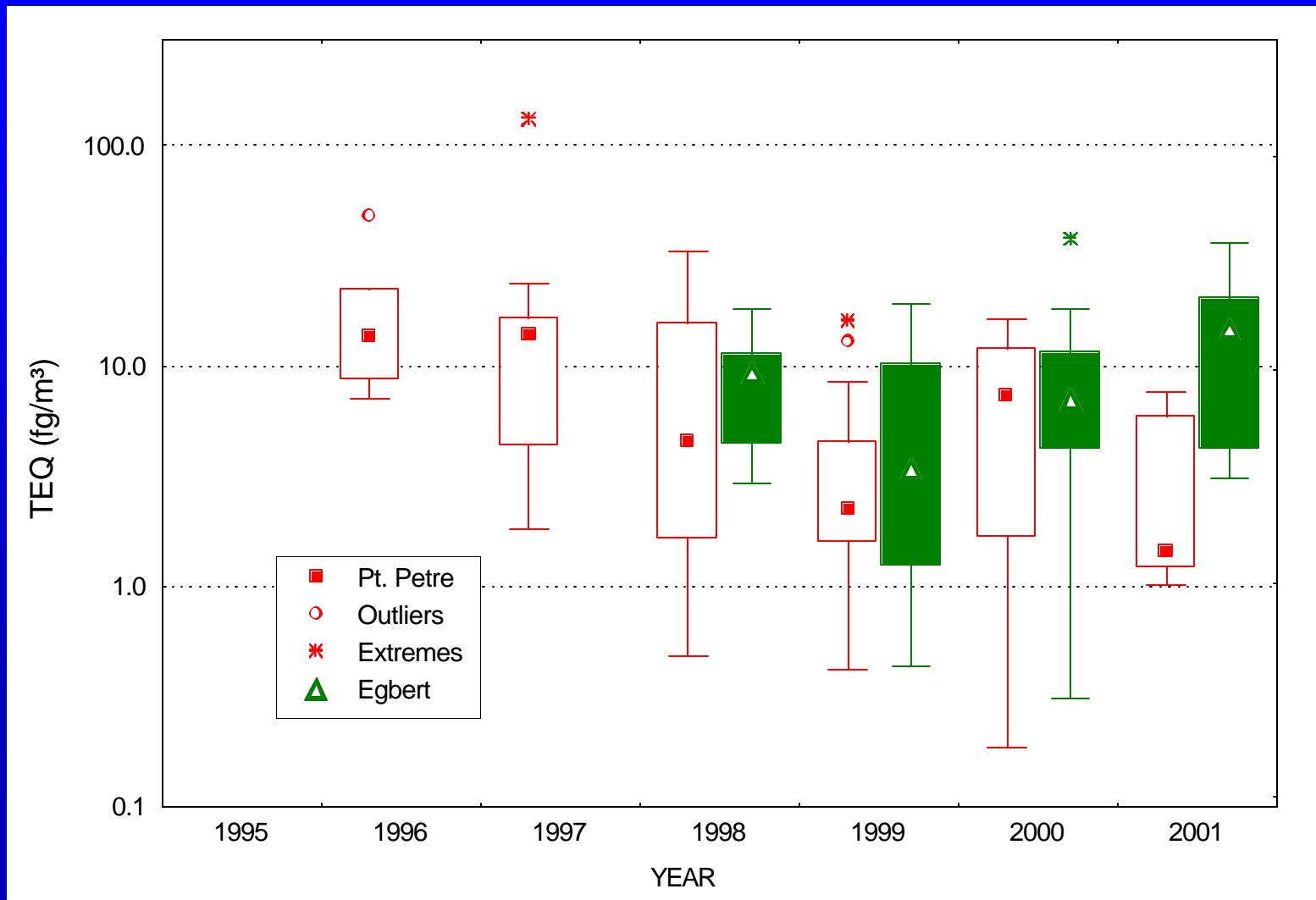
TEQ Concentrations (fg/m³) – Site Comparisons (All data 1989 – 2001)



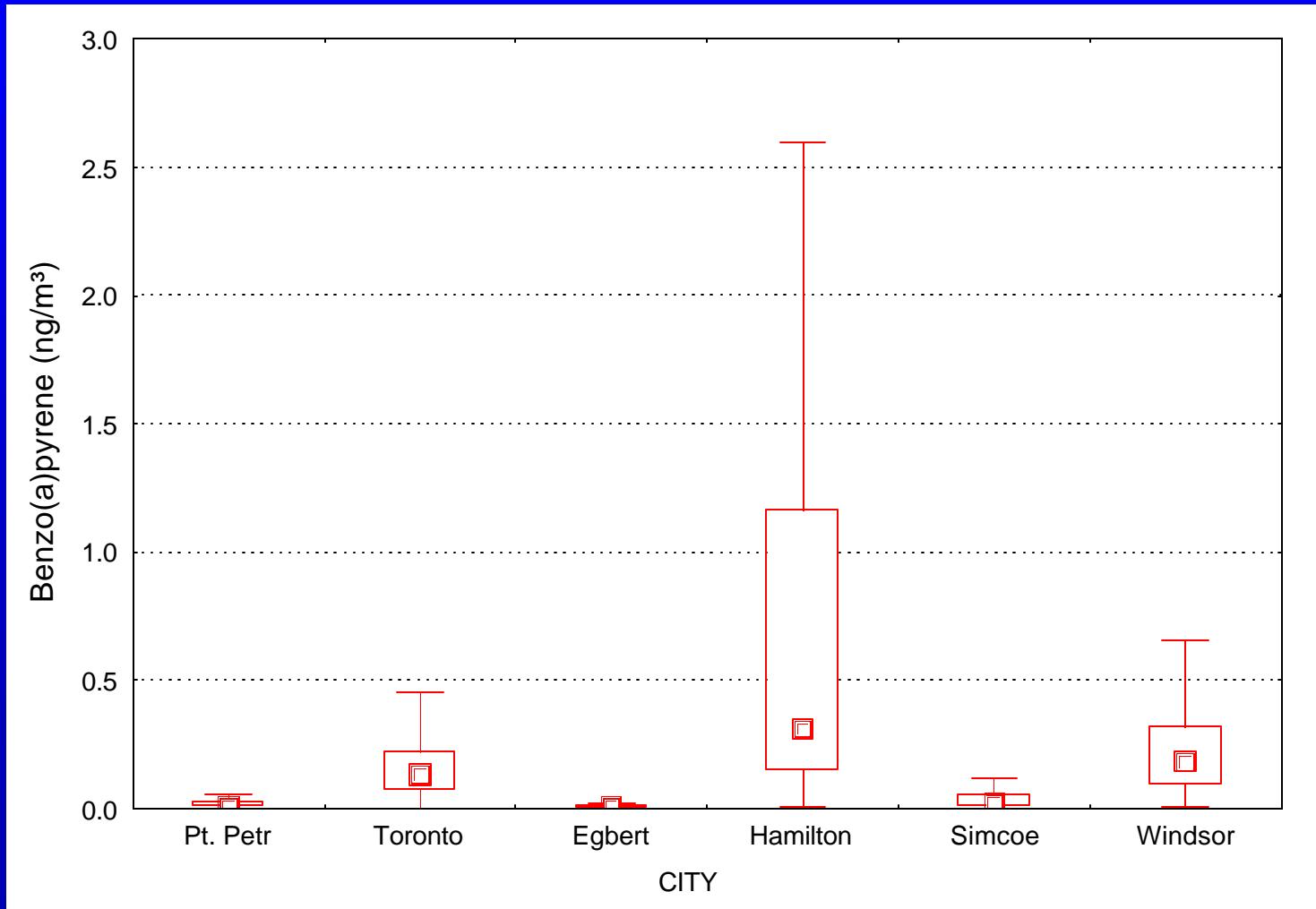
TEQ Trend (fg/m³) – Windsor Sites (1989 – 2001)



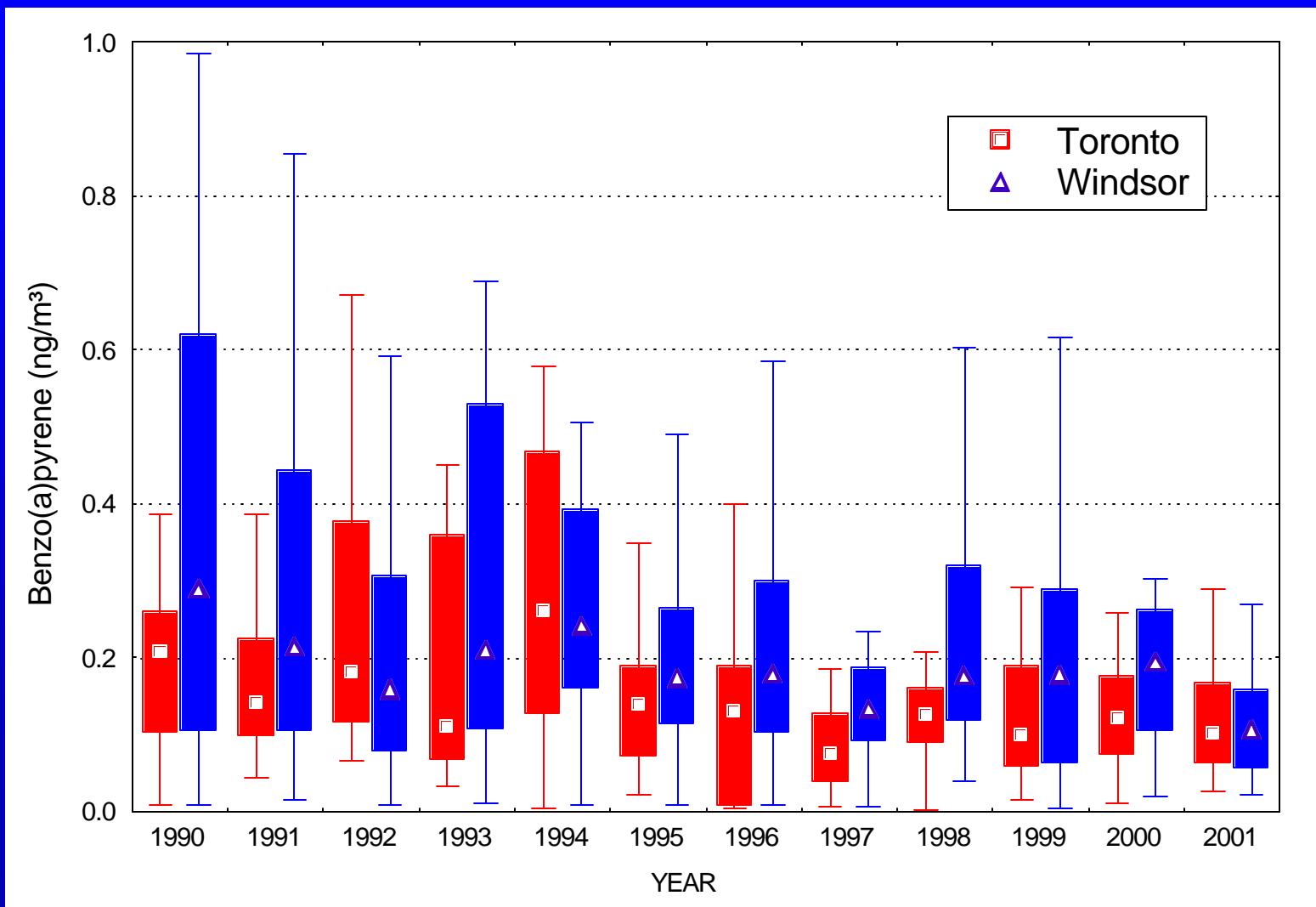
TEQ Concentrations (fg/m^3) – Rural Sites (1995 – 2001)



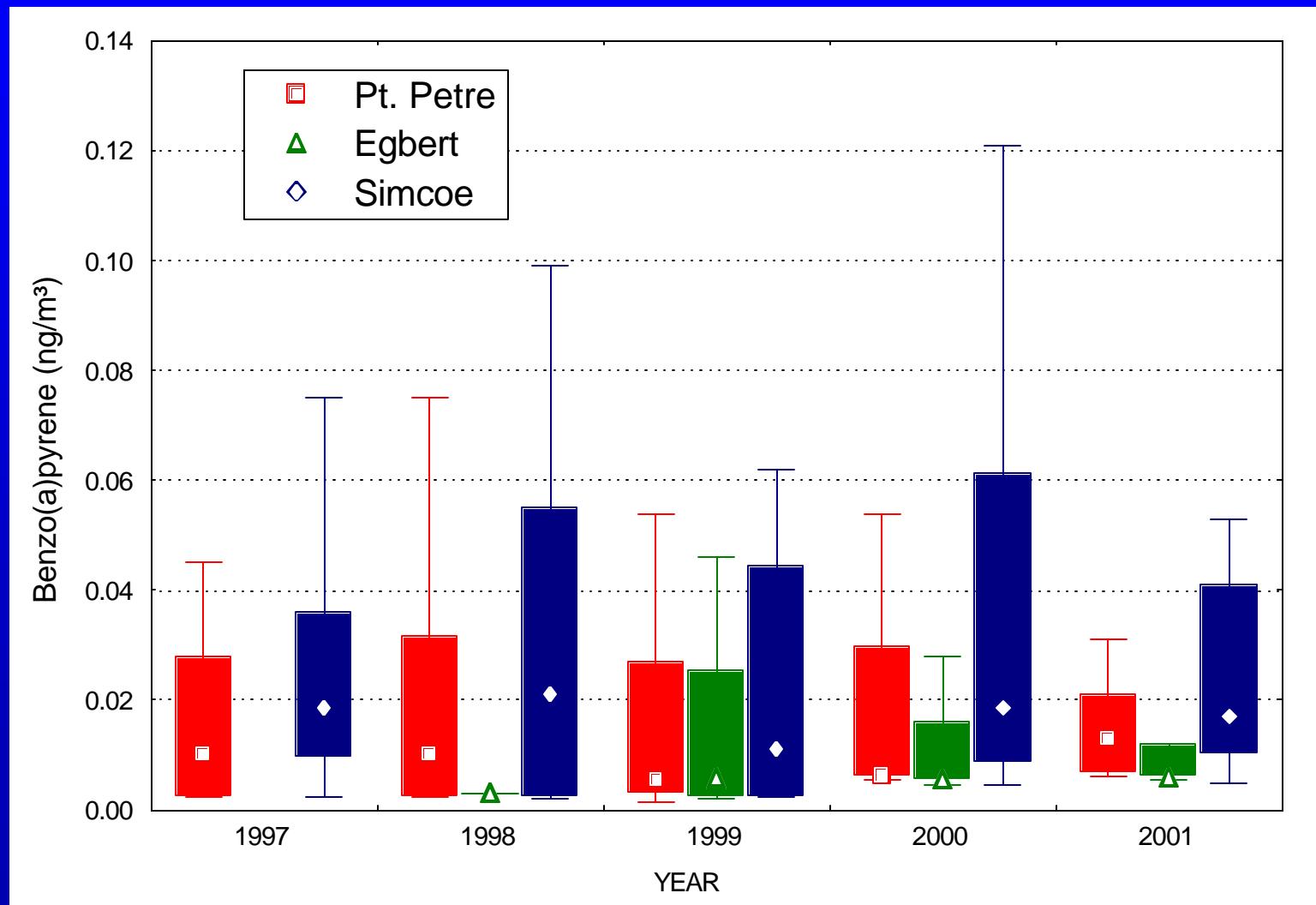
Benzo(a)pyrene (ng/m³) Site Comparison – (All Data 1989 - 2001)



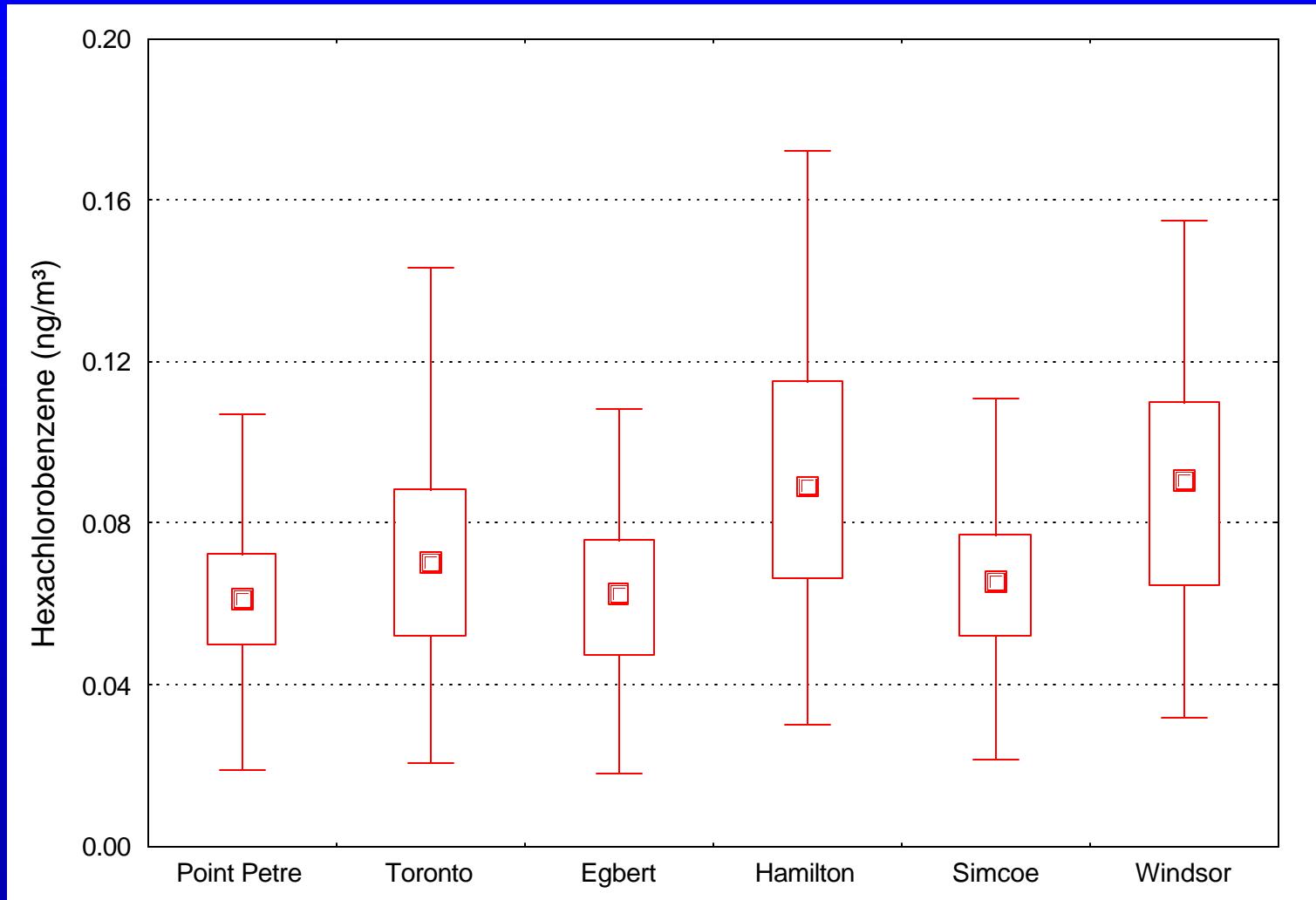
Benzo(a)pyrene (ng/m³) Trends – Urban Sites



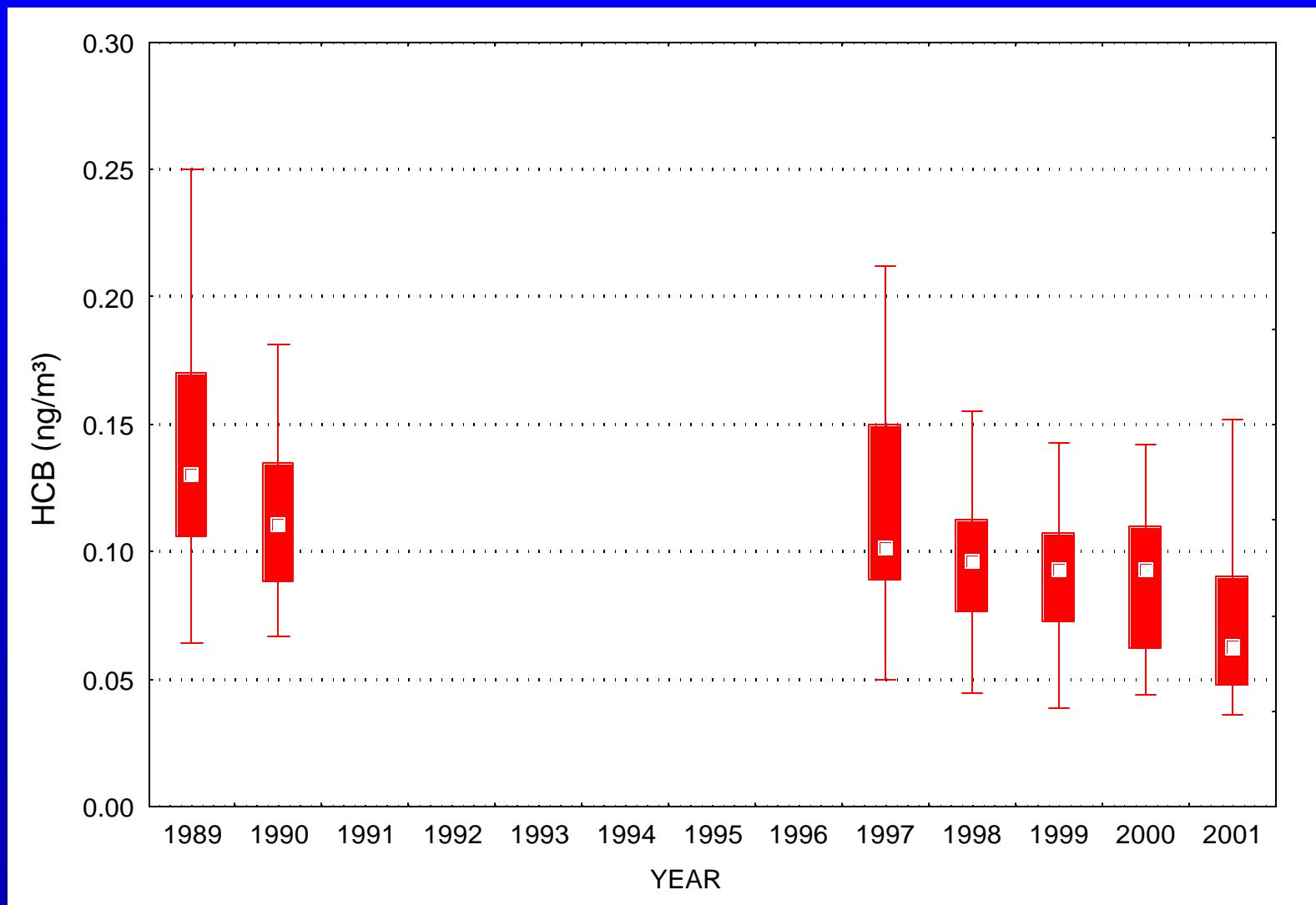
Benzo(a)pyrene (ng/m³) Trends – Rural Sites



Hexachlorobenzene (ng/m³) Site Comparisons (All Data 1996 – 2001)

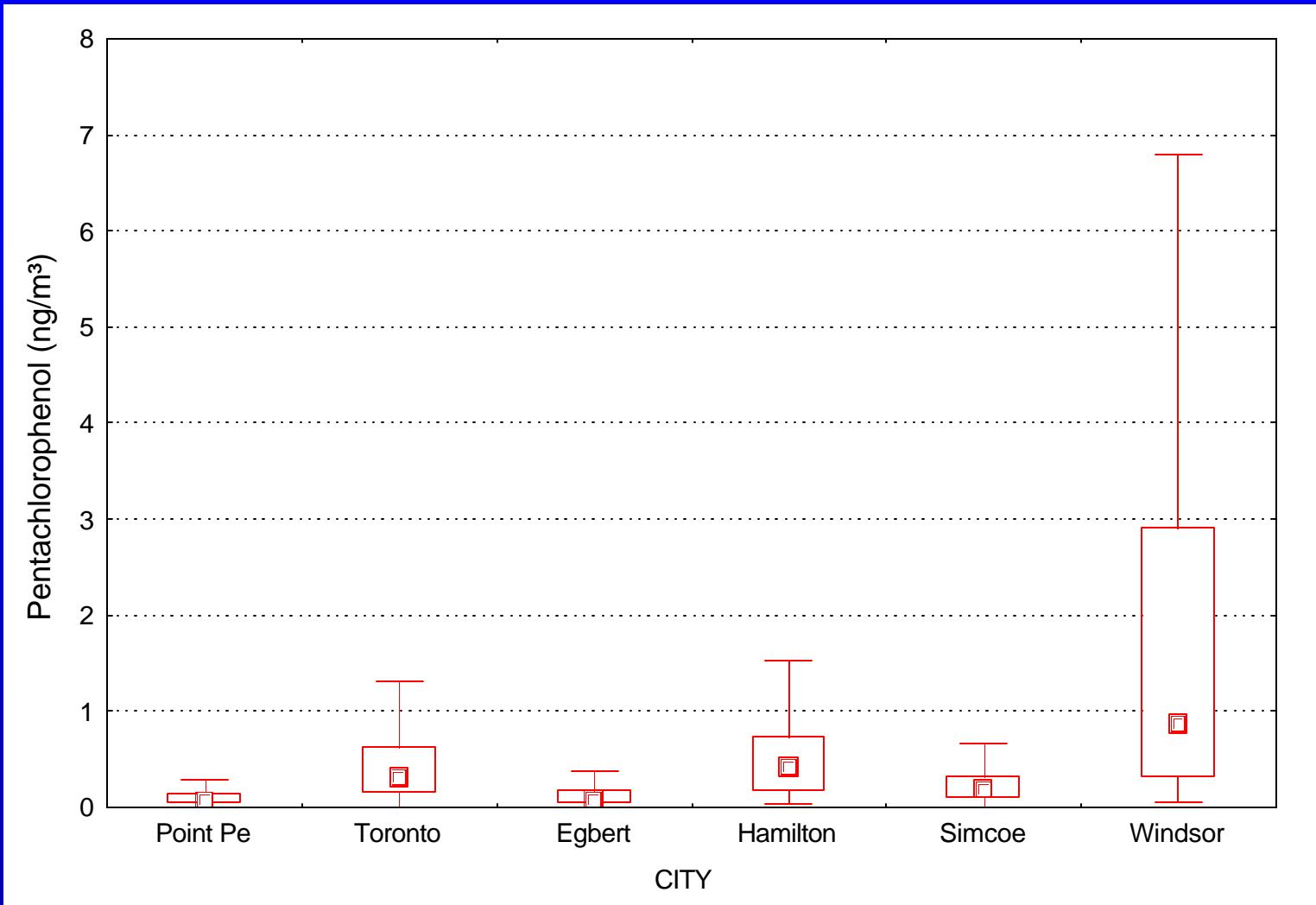


Hexachlorobenzene (ng/m³) Trend - Windsor

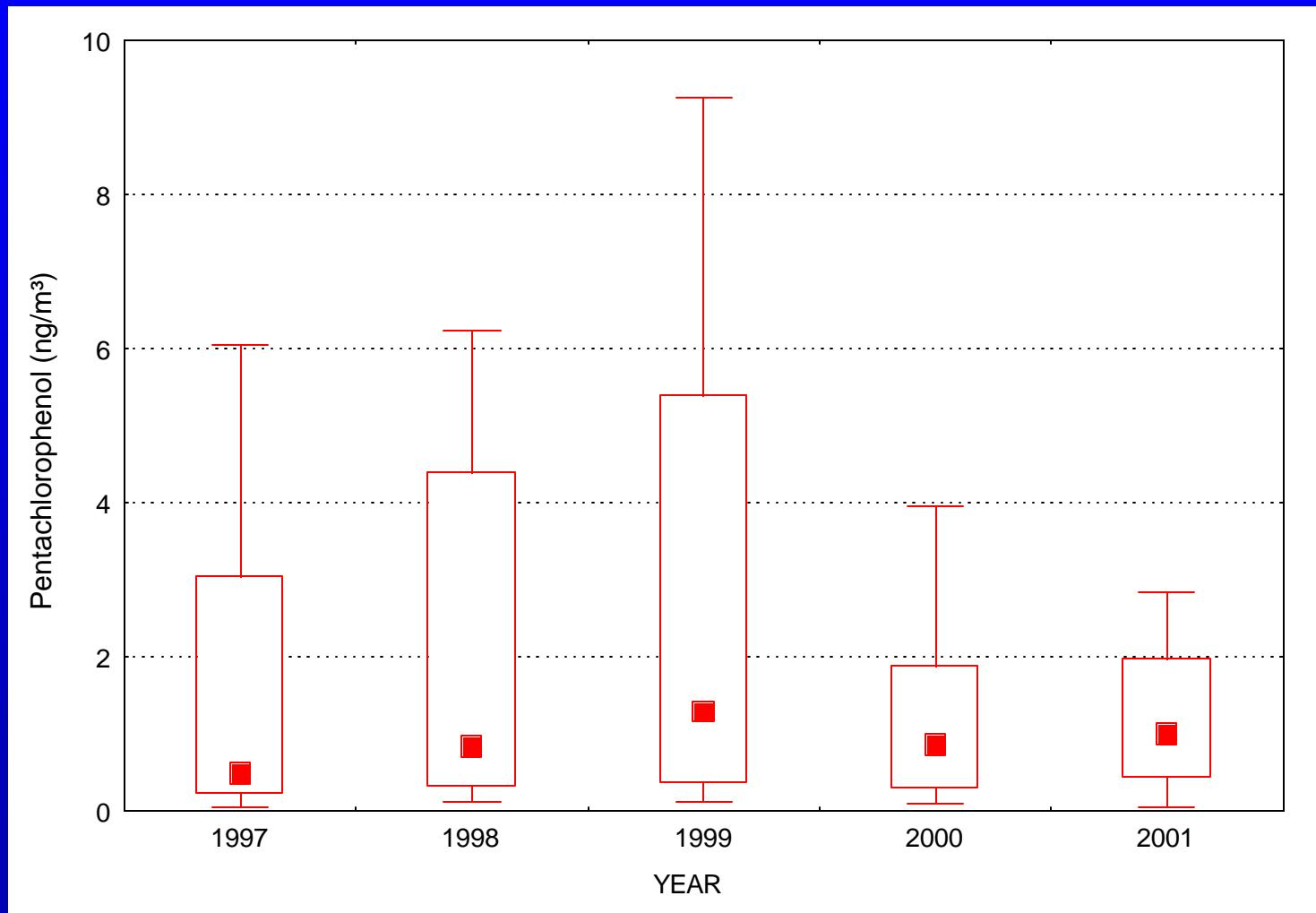


Pentachlorophenol (ng/m³) Site Comparisons

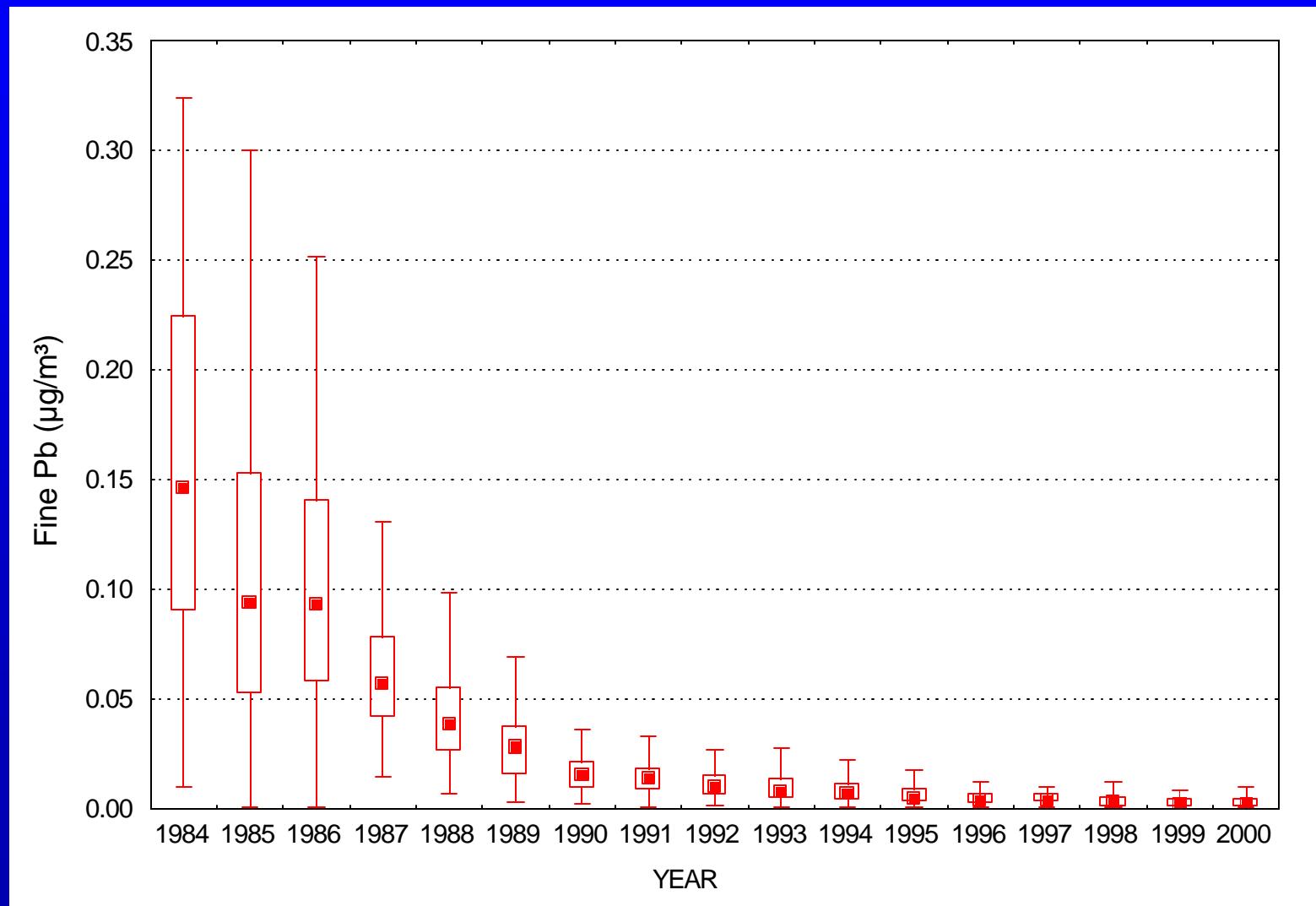
All Data (1996 – 2001)



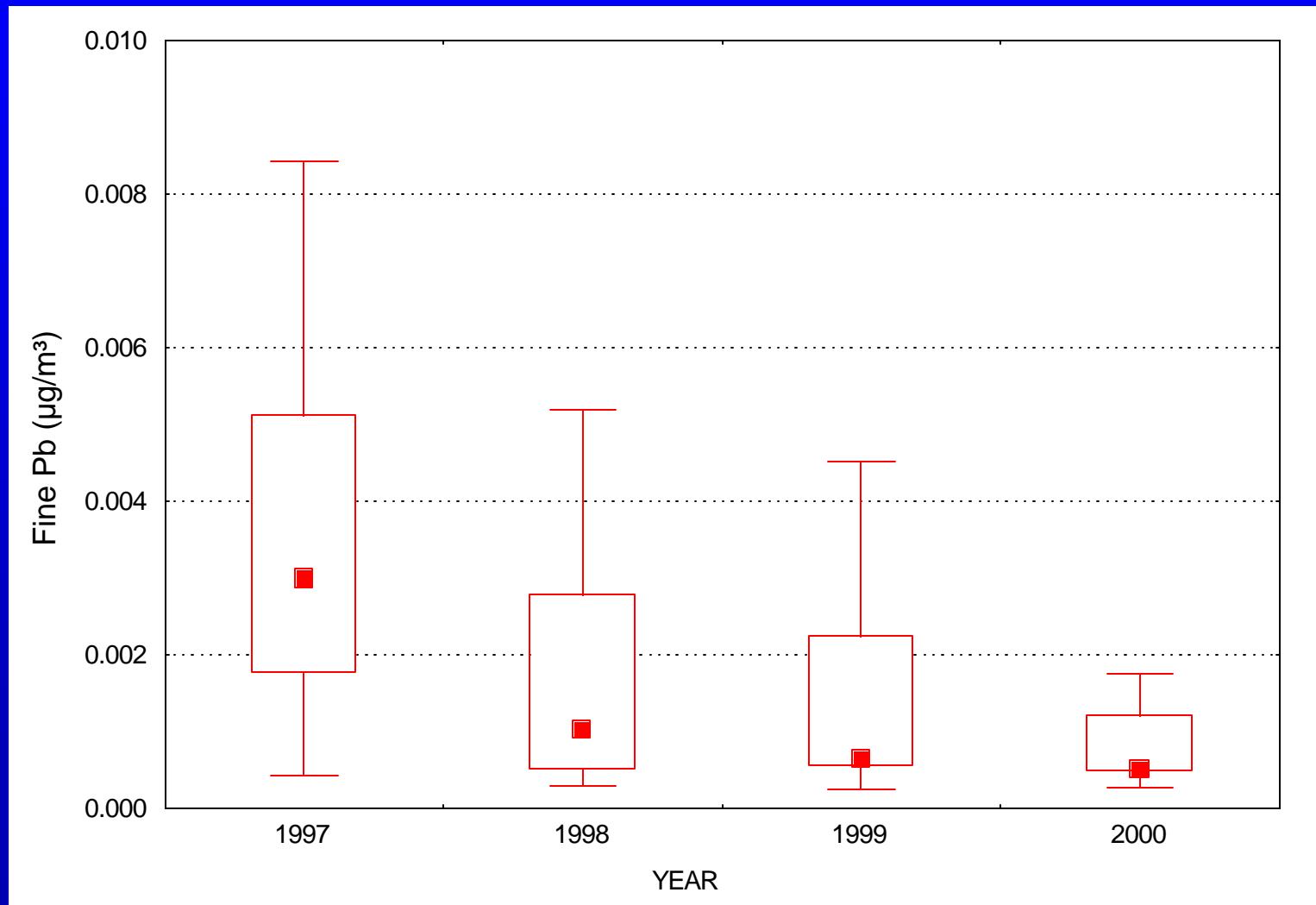
Pentachlorophenol (ng/m³) Trend - Windsor (1997 – 2001)



Pb Concentrations ($\mu\text{g}/\text{m}^3$) at Ontario Urban Sites (1984 – 2000)



Pb Concentrations ($\mu\text{g}/\text{m}^3$) at Pt. Petre (1997 – 2000)



Summary

- Decreasing trend in most substances with greatest decrease at urban sites
- Largest urban to rural gradients exist for PAH – smallest for HCB
- Evidence of point and/or area source impacts for most substances – small for HCB & OCS
- substances are ubiquitous in urban and rural areas – this is a function of very low detection limits